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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,402	01/09/2004	Dennis Michael Volpano	026009-000112US	7973

20350 7590 07/13/2007
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EXAMINER

BROOKS, SHANNON

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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07/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/754,402

Applicant(s)

VOLPANO, DENNIS MICHAEL

Examiner

Shannon R. Brooks

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-2,4-21 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43-47 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-21 and 50 is/are rejected.
- 7) ☒ Claim(s) 22-42,48 and 49 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. Claims 43-47 are allowed.
2. Claims 22-25 and 26-42 and 48-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim.

Response to Arguments

1. IDS information filed by applicant on July 17, 2006 is acknowledged.
2. Applicant's arguments filed 4/19/07 have been fully considered but they are not persuasive.

The argued features, i.e., "a public access (PAP) component for providing a plurality of virtual Basic Service Sets (BSS) where the component is configured to allow any one station to cause creation of a virtual BSS; wherein any number of said stations can belong to a virtual BSS; wherein a PAP appears to end stations as multiple physical access points, one AP for each virtual BSS; creating a virtual 802.11 BSS for a subset of stations where the creating can be initiated by any station in the subset; stations in the subset belong to a virtual BSS and share a group security association.

Kitchin is discussing a system and method for permitting communications between subscribers in a wireless network and devices coupled to one or more wired communications

networks. According to an embodiment, different classes of subscribers or clients may communicate with devices on different wired networks. In some cases access to each wired network may be restricted to a single class of subscribers or multiple classes of subscribers. Access is through an access point that may be part of an IEEE 802.11 system, and each wireless access point may be associated with multiple basic service sets such that a single access point appears to the wireless subscriber or client as multiple logical access points. Each BSS may be associated with a distinct MAC address such that each BSS defines a logical access point for a class of clients or subscribers. A security policy can be implemented in an access point to ensure that unauthorized clients or subscribers cannot access an associated wired communications network. Kitchin discusses a system where access is through an access point and each wireless access point may be associated with multiple basic service sets such that a single access point appears to the wireless subscriber or client as multiple logical access points. Therefore, Kitchin discloses the claim limitations of “a public access (PAP) component for providing a plurality of virtual Basic Service Sets (BSS) where the component is configured to allow any one station to cause creation of a virtual BSS. Kitchin discusses a system where each BSS may be associated with a distinct MAC address such that each BSS defines a logical access point for a class of clients or subscribers. Therefore, Kitchin discloses the claim limitation of “wherein any number of said stations can belong to a virtual BSS.” As previously discussed, Kitchin teaches discusses a system where access is through an access point and each wireless access point may be associated with multiple basic service sets such that a single access point appears to the wireless subscriber or client as multiple logical access points. Therefore Kitchin discloses the claim limitation of “wherein a PAP appears to end stations as multiple physical access points, one AP

for each virtual BSS.” Kitchin discloses that the access point that may be associated with multiple basic service sets such that a single access point appears to the wireless subscriber or client as multiple logical access points, may also be a part of an IEEE 802.11 system. Therefore, Kitchin meets the claim limitation of “a virtual 802.11 BSS for a subset of stations where the step of creating can be initiated by any station of the subset.” Kitchin discusses a system where an association can be implemented in an access point to ensure that unauthorized clients or subscribers cannot access an associated wired communications network. Therefore, Kitchin discloses a system where stations in a subset belong to a virtual BSS and share a group security.

3. Kitchin clearly discloses that the access point that may be associated with multiple basic service sets such that a single access point appears to the wireless subscriber or client as multiple logical access points. Therefore, Kitchin discloses a virtual BSS.

4. Ho discloses virtual where virtual streams are defining service sets. Therefore, Ho was used in combination with Kitchin.

5. Concerning dependent claims, Kitchin alone or in combination with secondary references discloses the limitations of the dependent claims, as discussed in the following office action.

6. Concerning any arguments on motivation and combination, the cited references are analogous and the motivations are clearly shown in the background of the references. Therefore, the references are combinable.

As a result, the argued limitations read upon the cited references as follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-3, 6-7, 9-13, and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (US 7130904 B2) in view of Ho (US 7151762 B1).

Consider **Claim 1**, Kitchin teaches a security apparatus for a wireless LAN supporting segregation of network traffic among a plurality of end stations, comprising: a Public Access Point (PAP) (read as appears as multiple logical access points, Col. 6, lines 1-67) component for providing a plurality of soft Basic Service Sets (BSS) (read as associated with more than one BSS, Col. 6, lines 1-15), said PAP component configured to allow any one end station among said end stations to cause creation of a virtual BSS (Col. 6, lines 1-15); wherein any number of said end stations can belong to said soft BSS (read as each BSS has a distinct MAC address, Col. 6, lines 20-23); wherein said PAP appears to said end stations as multiple physical access points, one access point for each of said soft BSSs (Col. 6, lines 16-20).

Kitchin discloses soft service sets, logically virtual, however does not specifically disclose virtual. Ho discloses virtual (See abstract, Col. 4, line 6-15 and Col. 5, lines 4-17), where Ho discusses virtual streams defining service sets).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Kitchin and have virtual sets as taught by Ho, thereby enhancing the quality of service of the network, as discussed by Ho (Col. 2, lines 27-37).

Consider **Claim 6**, Kitchin teaches a security apparatus for a wireless LAN supporting segregation of network traffic among a plurality of 802.11 end stations, comprising: a Public Access Point (PAP) (read as appears as multiple physical access points, Col. 6, lines 1-67) component configured to receive an association request from any one of said 802.11 end stations (read as may be associated with multiple BSSs, Pg. 4, lines 53-67 and Pg. 5, lines 1-10); and in response to receiving said association request, creating a personal virtual bridged LAN (PVLAN) (read as discovery of the LAN by stations can be controlled and distinguished, Col. 4, lines 4-25) instantiated into a soft 802.11 Basic Service Set (BSS) from within a single physical access point (AP) (Col. 6, lines 1-7).

Kitchin discloses soft service sets, logically virtual, however does not specifically disclose virtual. Ho discloses virtual (See abstract, Col. 4, line 6-15 and Col. 5, lines 4-17), where Ho discusses virtual streams defining service sets).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Kitchin and have virtual sets as taught by Ho, thereby enhancing the quality of service of the network, as discussed by Ho (Col. 2, lines 27-37).

Consider **Claim 7**, Kitchin teaches a method for a secure wireless network to support

segregation of network traffic among a plurality of stations, each of said stations having a hardware (MAC) address, comprising: creating a soft 802.11 Basic Service Set (soft BSS) (**Col. 6, lines 16-20**) for a subset of said stations (**read as corresponding with a class of subscribers or clients, Col. 6, lines 1-15**), wherein the step of creating can be initiated by any station in said subset; wherein stations in said subset belong to said soft BSS and share a group security association (**Col. 6, lines 23-26**).

Kitchin discloses soft service sets, logically virtual, however does not specifically disclose virtual. Ho discloses virtual (**See abstract, Col. 4, line 6-15 and Col. 5, lines 4-17**), where Ho discusses virtual streams defining service sets).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Kitchin and have virtual sets as taught by Ho, thereby enhancing the quality of service of the network, as discussed by Ho (**Col. 2, lines 27-37**).

Consider **Claim 2**, Kitchin teaches the apparatus, said PAP provisioning a plurality of separate LAN segments (**read as distinct physical media, Col. 4, lines 4-6**) while providing separate link privacy and integrity for each of said LAN segments (**Col. 6, lines 16-26**).

Consider **Claim 9**, Kitchin teaches the method, wherein at least one of said stations in said soft BSS is a public access point (PAP) (**Col. 6, lines 1-25**).

Consider **Claim 10**, Kitchin teaches the method, said group security association further comprising: a unique unicast security association for every station in said soft BSS (**Col. 6, lines 16-55**); wherein said security association is shared between each station and said PAP of said soft BSS (**Col. 6, lines 16-55**).

Consider **Claim 11**, Kitchin teaches the method, further comprising: a plurality of soft

BSSs, wherein each softl BSS has its own identifier, (BSSID) (**Col. 4, line 64-67 and Col. 5, lines 1-9**).

Consider **Claim 12**, Kitchin teaches the method, said BSSID comprising: a virtual MAC address for said soft BSS (**Col. 5, lines 45-67**).

Consider **Claim 13**, Kitchin teaches the method, wherein said PAP receives a frame from an 802.11 Wireless Medium (WM) destined for one of its virtual MAC addresses (**Col. 5, lines 11-67**); and wherein said PAP transmits a frame to said WM using one of its virtual MAC addresses as a source MAC address of said frame (**Col. 5, lines 11-67**).

Consider **Claim 16**, Kitchin teaches the method, wherein a PAP can belong to more than one soft BSS (**Col. 6, lines 1-15**).

Consider **Claim 17**, Kitchin teaches the method, wherein any station that is not a PAP (**read as is not equipped to appear as multiple logical access points so inherently can belong to at most one**) can belong to at most one soft BSS (**Col. 6, lines 16-20**).

Consider **Claim 18**, Kitchin teaches the method, further comprising: a virtual bridged LAN (VLAN) for bridging a softl BSS with another soft BSS by connection of each softl BSS's PAP (**Figs. 2 and 3 and Col. 4, lines 53-67 and Col. 5, lines 1-10**).

2. **Claims 4-5, and 19-21 and 50** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (US 7130904 B2) in view of Ho (US 7151762 B1) and further in view of Meier (US 6847620 B1).

Consider **Claim 4**, Kitchin teaches the apparatus, further comprising: a plurality of PAPs (read as a plurality of access points, Col. 4, lines 53-67), except that it does not specifically teach and a location-update protocol (read as protocol data units, PDUs) for updating forwarding tables of bridges that connect said PAPs together.

However, Meier teaches a location-update protocol (read as protocol data units, PDUs) for updating forwarding tables of bridges that connect said PAPs together (**Col. 4, lines 44-57**).

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teachings of Meier into Kitchin to aid in the building of a spanning tree (**Col. 4, lines 53-57**).

Consider **Claim 5**, Kitchin teaches the apparatus, further comprising, except that it does not specifically teach a fine bridging method (**utilizing an 802.1Q bridge procedure**) for limiting communications between said end stations that belong to said soft BSS.

However Meier teaches a fine bridging method (**utilizing an 802.1Q procedure**) for limiting communications between all said end stations that belong to a soft BSS (**Col. 4, lines 23-43**).

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teachings of Meier into Kitchin to aid in assignment of unique identifiers (**Col. 4, lines 23-27**).

Consider **Claim 19**, Kitchen teaches the method, wherein except that it does not teach wherein the PAP of each soft BSS connects to a Distribution System (DS) via a trunked or untagged port of a VLAN-aware bridge.

However, Meier teaches wherein the PAP of each soft BSS connects to a Distribution System (DS) via a trunked or untagged port of a VLAN-aware bridge (**Col. 3, lines 6-50 and Fig. 1, line 102**).

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Meier into Kitchen to aid in logically isolating broadcast domains (**Col. 3, line 10**).

Consider **Claim 20**, Kitchen teaches the method, wherein except that it does not teach wherein frames transmitted to said DS carry VLAN tags known to a Distribution System Medium (DSM).

However, Meier teaches wherein frames transmitted to said DS carry VLAN tags known to a Distribution System Medium (DSM) (**Col. 3, lines 6-67 and Col. 4, lines 1-5**).

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Meier into Kitchen to aid in logically isolating broadcast domains (**Col. 3, line 10**).

Consider **Claim 21**, Kitchen teaches the method, except that it does not teach the network wherein said PAP maintains a DSM VLAN mapping that maps a VLAN tag to a soft BSS identifier (BSSID).

However, Meier teaches the network wherein said PAP maintains a DSM VLAN mapping (**a method for isolating**) that maps a VLAN tag to a soft BSS identifier (BSSID) (**Col. 3, lines 6-21**).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Meier into Kitchin in order to aid in isolating broadcast domains (**Col. 3, lines 6-21**).

Consider **Claim 50**, Kitchin teaches the method, wherein except that it does not specifically teach wherein the at least one PAP bridges an 802.11 Wireless Medium (WM) and an 802.11 Distribution System Medium (DSM) or bridges said stations within said soft BSS.

However, Meier teaches wherein the at least one PAP bridges an 802.11 Wireless Medium (WM) and an 802.11 Distribution System Medium (DSM) (read as trunked or untagged part of VLAN aware bridge) or bridges said stations within said soft BSS Col. 3, lines 6-21 and Fig. 1, line 102).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Meier into Kitchin in order to aid in subnet mobility (Pg. 3, lines 6-21).

Kitchin discloses soft service sets, logically virtual, however does not specifically disclose virtual. Ho discloses virtual (**See abstract, Col. 4, line 6-15 and Col. 5, lines 4-17**), **where Ho discusses virtual streams defining service sets**).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Kitchin and have virtual sets as taught by Ho, thereby enhancing the quality of service of the network, as

discussed by Ho (**Col. 2, lines 27-37**).

3. **Claims 14, and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (US 7130904 B2) in view of Ho (US 7151762 B1) and further in view of Cervello (US 2002/0071448 A1).

Consider **Claim 14**, Kitchin teaches the method, further comprising: a plurality of soft BSSs supported by a shared TSF (Timing Synchronization Function)(Col.6, lines 48-67), except that it does not specifically teach DCF (Distributed Coordination Function), and, optionally, a PCF (Point Coordination Function), at a single PAP.

However, Cervello teaches DCF (Distributed Coordination Function), and, optionally, a PCF (Point Coordination Function), at a single PAP (**Fig. 3 and Pg. 2, [0017]**).

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Cervello into Kitchin to aid in efficient accessing of the wireless medium (**Pg. 2, [0016]**).

Consider **Claim 15**, Kitchin teaches the method , each PAP further comprising, except that it does not specifically teach the network , each PAP further comprising a single NAV (Network Allocation Vector) and PC (Point Coordinator).

However, Cervello teaches the network, each PAP further comprising a single NAV (Network Allocation Vector) (**Pg. 2, [0017]**) and PC (Point Coordinator) (**Pg. 2, [0017]**).

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Cervello into Kitchin to aid in efficient accessing of the wireless medium (**Pg. 2, [0016]**).

4. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (US 7130904 B2) in view of Ho (US 7151762 B1) and further in view of Beach (US 2003/0112820 A1).

Consider **Claim 8**, Kitchin teaches the method, said group security association of each station comprising: an encryption key (Col. 6, line 37), except that it does not specifically teach and an authentication code key.

However, Beach teaches an authentication code key (**read as authentication protocols, Pg. 11, [0150]**).

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Beach into Kitchin to increase security efficiency (**Pg. 11, [0150]**).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shannon R. Brooks whose telephone number is (571) 270-1115. The examiner can normally be reached on 7:30a.m. to 5p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shannon Brooks

June 29, 2007


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